ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Amendment of the Commission's Rules	)	GN Docket No. 96-228
to Establish Part 27, the Wireless	)	
Communications Service ("WCS")	)	

COMMENTS OF ADC TELECOMMUNICATIONS, INC.

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EXECUTIVE SUMMARY

ADC Telecommunications, Inc. ("ADC") believes that the public interest will best be served by an allocation plan for the 2305-2320 MHz and 2345-2360 MHz band that differs from that proposed in the *Notice of Proposed Rulemaking.*

First, the Commission should set aside the 2345-2360 MHz band solely for DARS use. Absent such a reservation, it is unlikely that DARS proponents will be able to secure at auction the national footprint they need in order to provide a viable service. Moreover, by isolating the DARS spectrum from that used for terrestrial WCS, the Commission can eliminate potential coordination problems that could undermine service offerings throughout the bands in question.

ADC further proposes that the Commission restrict the 2305-2320 MHz band for fixed terrestrial use, and ban CMRS applications. There is a pressing demand for over-the-air video service providers, such as broadcasters and wireless cable system operators, to secure spectrum for return paths in order to compete with Internet access and other interactive offerings being planned by cable and LMDS. Adoption of the flexible service rules proposed for WCS could foreclose use of the 2305-2320 MHz band for such applications, while adversely impacting those who have recently secured other CMRS authorizations at auction. Moreover, unbridled flexibility will slow the introduction of new service offerings, as manufacturers will be reluctant to invest in research and development until a critical mass of WCS licensees have announced plans to engage in a common use of the spectrum.

ADC believes the Commission should award 15 MHz authorizations for the 2305-2320 MHz band based on BTAs. While ADC acknowledges the Commission's desire to expedite the auction process to meet Congress' September 30, 1997 deadline, that objective is better achieved by modifying the auction rules than artificially restricting the number of licenses made available at auction. Because BTAs best reflect the likely service area of some auction participants, the Commission should use BTAs as the licensed service area, while permitting bidders to aggregate markets.

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To: The Commission

COMMENTS

ADC Telecommunications, Inc. ("ADC"), pursuant to Section 1.415(a) of the Commission's Rules, hereby submits its initial comments in response to the Commission's *Notice of Proposed Rule Making* ("*NPRM*") commencing this proceeding.[1/]

I. INTRODUCTION

ADC is a leading supplier of transmission and networking products and systems for telecommunications, cable television, broadcast, cellular and enterprise networks. Its ADC Wireless Systems division provides innovative access and transport solutions for cellular, PCS, and wireless access providers worldwide. ITS Corporation, a wholly-owned subsidiary of ADC, is a leading manufacturer of wireless broadband transmission products for broadcasting and multichannel video and data distribution applications. As such, ADC has a keen interest in any allocation of spectrum that could be employed by its customers.

[1/] *Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service ("WCS")*, FCC 96-441 (rel. Nov. 12, 1996) *summarized* 61 Fed. Reg. 59048 (Nov. 20, 1996).

This proceeding has its genesis in Section 3001 of the Omnibus Consolidated Appropriations Act of 1997 ("Appropriations Act").[2/] That section requires the Commission to reallocate the frequencies at 2305-2320 MHZ and 2345-2360 MHZ to wireless services in a manner that is consistent with international agreements, to commence an auction for licensing these frequencies by April 15, 1997, and to collect the proceeds of that auction by no later than September 30, 1997.[3/] The spectrum in issue is allocated by international agreements to fixed, mobile, broadcasting-satellite, and radiolocation services on a primary basis, and for amateur use on a secondary basis. With the *NPRM*, the Commission proposes to reallocate the frequencies at 2305-2320 MHZ and 2345-2360 MHZ to a new "Wireless Communications Service" ("WCS").[4/] As contemplated by the *NPRM*, WCS licensees thus would be permitted "to use this spectrum for any use permitted within any of the allocation categories of fixed, mobile, radiolocation, and broadcasting-satellite services, subject to international requirements and coordination."[5/]

With the *NPRM*, the Commission has sought comment on a number of issues associated with the licensing of WCS spectrum, including: (i) whether such flexibility is in the public

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[2/] P.L. 104-208, 110 Stat. 3009 (1996).

[3/] Appropriations Act, § 3001.

[4/] *See NPRM*, at ¶¶ 6-8.

[5/] *Id.*, at ¶ 9.

interest; (ii) how much spectrum should be assigned under each WCS license, and (iii) what service area should be associated with each license.[6/]

As will be discussed in more detail below, ADC opposes the unbridled service flexibility proposed in the *NPRM* for WCS licensees. Rather, ADC believes that the public interest will best be served by allocating the 2345-2360 MHZ band solely for satellite digital audio broadcasting ("DARS") and by allocating the 2305-2320 MHZ band for fixed terrestrial use. An allocation of spectrum reserved for DARS will assure that the public benefits of a satellite audio service are realized, while an allocation of 15 MHZ for fixed terrestrial use will provide an effective vehicle for over-the-air video service providers such as broadcasters and wireless cable system operators to secure much-needed spectrum for use as a wireless return path for interactive services.

Moreover, while ADC appreciates the Commission's desire to conduct as rapid an auction as possible in order to meet the deadlines established by the Appropriations Act, ADC believes that the Commission should award the 15 MHZ WCS licenses in the 2305-2320 MHZ band on the basis of Rand-McNally Company Basic Trading Areas ("BTAs"). BTAs most closely parallel the logical service area of broadcasters and wireless cable system operators, allowing them to participate in an auction without having to acquire service areas far larger than they can possibly use. Yet, by using a simultaneous multi-round auction and permitting the aggregation of multiple licenses, the Commission will assure those who desire to serve regional markets or a national market the opportunity to accumulate the authorizations they need.

[6/] *See NPRM* at ¶¶ 9-13.

II. DISCUSSION.

A. *The Proposed Allocation Of 15 MHZ of Spectrum For DARS Will Assure That At Least Some DARS Service Will Be Possible.*

While ADC recognizes that the Commission is unlikely to retain the entire 2310-2360 MHZ allocation for DARS, the rules adopted in response to the *NPRM* should assure that DARS can become a reality in some form. It was, after all, not long ago that the Commission found that:

> the record supports a spectrum allocation for satellite DARS and that the allocation is in the public interest. Satellite DARS will provide continuous radio service of compact disk quality for all listeners and will offer an increased choice of over-the-air audio programming. Further, a satellite delivery system for DARS will make it possible to serve segments in the United States which are currently underserved and unserved. As suggested by some proponents, a satellite DARS system has the potential to provide new services to rural listeners, minority and ethnic groups, and audiences whose first language is not English. In addition, this new service will provide opportunities for domestic economic development and improve U.S. competitiveness in the world marketplace.[7/]

Nothing has changed since then to suggest that an allocation of spectrum to DARS is any less in the public interest.

By allocating the entire 2345-2360 MHZ band for DARS, but precluding DARS from the 2305-2320 MHZ band, the Commission can assure spectrum for DARS, while avoiding the concerns regarding potential interference to Canadian terrestrial facilities addressed in the *NPRM* and in the *Notice of Proposed Rulemaking* in IB Docket No. 95-91 (the "*DARS Licensing*

[7/] *Amendment of the Commission's Rules with Regard to the Establishment and Regulation of New Digital Audio Radio Services*, 10 FCC Rcd 2310, 2314 (1995).

NPRM").[8/] Indeed, ADC's approach is fully consistent with the Commission's own proposal to avoid initially licensing spectrum below 2320 MHZ for DARS.[9/]

ADC proposes that the Commission issue three 5 MHZ national licenses for DARS through the auction process, with no limit on the number of licenses a given entity can secure. The Commission has previously proposed the use of national DARS licenses, and it appears that national licenses are the preference of the DARS industry.[10/] Moreover, the Commission has previously contemplated in the *DARS Licensing NPRM* the use of 5 MHZ blocks in authorizing DARS.[11/]

Absent the set-aside approach advocated by ADC, it is unlikely that DARS will become a viable service. Although it is theoretically possible that a DARS proponent could secure a national authorization by aggregating numerous regional authorizations, as a practical matter, the licensing of spectrum in the 2345-2360 MHZ band on anything but a national basis will make it unlikely that DARS proponents will be able to secure at an auction for flexible use spectrum

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[8/] *See NPRM*, at ¶ 6; *Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHz Frequency Band*, 11 FCC Rcd 1, 20-22 (1995)[hereinafter cited as "*DARS Licensing NPRM*").

[9/] *See DARS Licensing NPRM*, 11 FCC Rcd at 21. Although the Commission proposed licensing below 2320 MHz for DARS if it conducted auctions, it recognized that any license for spectrum below 2320 MHz would be of less value because of the difficulties of coordinating with the Canadian government. *See id.* at 25.

[10/] *See id.* at 33.

[11/] *See id.* at 13. Although the Commission initially proposed a spectrum cap of 20 MHz for DARS, ADC believes that no cap would be appropriate if only 15 MHz is made available for DARS use. *See id.*

the national footprint they need to provide a viable service. Thus, unless the Commission provides a set-aside for DARS, the public may be unable to realize the recognized benefits of a satellite audio service. Moreover, allocating a separate 15 MHz block for DARS avoids the thorny problems, discussed in more detail below, of coordinating DARS use with terrestrial use — problems that could substantially undermine the value of the 2.3 GHz band for any service.[12/]

B. There Is A Pressing Demand For Over-The-Air Video Service Providers To Secure Spectrum For Return Paths.

Over-the-air video providers, particularly broadcasters and wireless cable system operators, today face a pressing need for spectrum that can be used by viewers for return path communications. While ADC does not propose that the 2305-2320 MHz band be set aside solely for such applications, ADC does believe it is essential for the Commission to restrict that band to fixed terrestrial use, and to license that band on a BTA basis, in order to provide over-the-air video providers a vehicle for meeting that need.[13/]

As the Commission is well-aware, the public is demanding increasingly higher speed data links for home, business and educational use, particularly to better access the graphics-rich World

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[12/] *See infra*, at 13-15.

[13/] By proposing that the 2305-2320 MHz band be available for wireless cable system return links, ADC is not suggesting that MMDS system operators should be limited to that band for return links. ADC notes with approval that the Commission has granted several experimental and developmental authorizations permitting the use of Multipoint Distribution Service ("MDS") and Instructional Television Fixed Service ("ITFS") channels for return paths, and urges the Commission to view with favor efforts to employ that spectrum for such use. *See* "The Mass Media Bureau Implements Policy For Provision Of Internet Service On MDS and Leased ITFS Frequencies," *Public Notice*, DA 96-1720 (rel. Oct. 17, 1996) [hereinafter cited as *"Internet Public Notice"*].

Wide Web. Even with the widespread availability of reasonably priced 28.8 Mbps modems, delays in accessing Web pages are driving home, business and educational users to search for higher speed alternatives to the twisted pair wired local telephone loop. While local telephone companies are focusing their attention on ISDN and XDSL (digital subscriber loop), neither of these solutions is without problems. The cost of terminal equipment and infrastructure upgrades, the time necessary to rebuild existing infrastructure, and capacity limitations are inherently slowing acceptance of ISDN and XDSL as potential vehicles for high speed Internet access. Moreover, ISDN and XDSL still require connection to the local switched public telephone network, which is being overloaded in major markets by the influx of packet-based Internet traffic with average call times up to five times as long as a typical voice call. Broadband wireless connections to the Internet can avoid all of these drawbacks.

At the same time, there is increasingly a convergence between the television monitor and the computer. The *Washington Post* has noted that "digital technology is now capable of making TV sets into receivers of all kinds of electronic information, such as e-mail, print data or paging services, or to be used in serving the Internet."[14/] And, as *Broadcasting & Cable* reported:

> A slew of new consumer electronics products set to hit retail stores this fall is designed to bring about the long-promised convergence of the PC and TV. . . . The PC-TVS and $300-400 set-top boxes due to arrive on store shelves during the next few months are designed to turn the TV screen into a monitor for Internet browsing with a wireless remote and a wireless keyboard. . . . The Electronics Industries Association optimistically predicts that PC-TVS — such as the $3,000-$4,800 big-screen models from South Dakota-based

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[14/] Farhi, "Agreement Removes A Digital TV Obstacle," *Washington Post*, at D1 (Nov. 26, 1996).

> Gateway 2000 — will penetrate the marketplace faster than did compact discs and VCRs, reaching 17% of consumers over the next five years.[15/]

Given that the marriage of Internet access to traditional television monitors is upon us, it is apparent that consumers will highly value the ability to secure both video programming and access to the Internet and other sources of data from a single vendor. Thus, a video programming distributor that can offer an integrated Internet access service will have a substantial leg up on its competitors, while one that cannot offer such service will be left behind.

This convergence is well underway, as the franchised cable industry is moving rapidly into a variety of two-way services, particularly Internet access.[16/] As one recent report put it:

[15/] Littleton, "PC-TV: threat or promise?", *Broadcasting & Cable*, at 58 (Oct. 28, 1996). *See also* Gibbons, "WebTV Backs Hot Set-top: An Internet Browser," *Multichannel News*, at 65 (July 15, 1996); Internet TV Waiting in Wings," *Broadcasting & Cable*, at 31 (Oct. 28, 1996); Barthold, "St. Louis Subscribers To Get World Wide Web Access Via TVS," *Cable World*, at 32 (Oct. 29, 1996)("Charter Communications, one of five MSOs that will test WorldGate Communications; TV On-Line (TVOL) Internet-access service, will offer it to as many as 100 subscribers in its St. Louis County, Mo., franchise early next year. TVOL lets subscribers access the Internet and the World Wide Web via their set-top box and a remote control.").

[16/] *See, e.g.* Barthold, "Shopping the Cable Modem Market," *Cable World*, at 37 (Nov. 25, 1996); Breznick, "Prime Cable, Media General Slate Cable Modem Trials," *Cable World*, at 65 (Nov. 22, 1996); Vittore, "TCI Telephony Says It's on Track To Launch in Ill., Calif. This Year," *Cable World*, at 56 (Nov. 22, 1996); Ellis, "Continental Is Latest MSO To Launch High-Speed Data," *Multichannel News*, at 89, 91 (Sept. 23, 1996); Mitchell, "At Continental, Modem Services Are Ready to Roll," *Cable World*, at 1 (Sept. 23, 1996); Breznick, "Telephony, Data Game Plans," *Cable World*, at 22 (filed Sept. 23, 1996); Dawson, "Road Runner Hits the Ground," *Multichannel News*, at 1 (Sept. 16, 1996); Ellis, "@Home Lights Up Network Backbone," *Multichannel News*, at 53 (Sept. 16, 1996); MSOs Move Forward With Cable Modems, *Multichannel News*, at 32A (June 10, 1996); Breznick, "Modem Mania: Most Major MSOs Ready Rollouts by Year's End," *Cable World*, at 28 (June 10, 1996); Tedeso, "Modems: The Great Cable Hope," *Broadcasting & Cable*, at 38-43 (May 27, 1996).

> The cable empire is finally striking back at [its competitors]. Its secret weapon: blisteringly fast access to the Internet, courtesy of the cable modem.[17/]

Cable operators are not only positioning their service as high speed Internet access for personal computers, they are looking to take advantage of the convergence of the television monitor and the Internet. For example, it was recently announced that Comcast Cable Communications, Inc., Cablevisions Systems Corp., Adelphia Communications Corp., Charter Communications, Inc. and a joint venture of US West, Inc., Tele-communications, Inc. and Cox Communications, Inc. are testing a television set-top device that will allow cable operators to deliver Internet access directly to television monitors, without an intervening computer.[18/]

Moreover, cable will not be the only video programming distributor that is likely to be providing Internet access and other two-way services. The Commission has already allocated spectrum to the Local Multipoint Distribution Service ("LMDS"), a service that can be deployed for "video program distribution, two-way interactive video, teleconferencing, telemedicine,

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[17/] "In Focus," *Cablevision*, at 16 (Oct. 21, 1996).

[18/] "Cable TV Firms To Test 'PC-Less, Internet Access," *The Cable-Telco Report*, at 10 (Nov. 4, 1996).

telecommuting, and high speed data services."[19] LMDS licensing is expected to take place early next year.

As broadcasters convert to digital technology, they too will be positioned to provide Internet access and other data services.[20] With last week's compromise among the broadcast and computer industries regarding digital television standards,[21] "both broadcasters and computer makers are forecasting a new age of television in which PCs will join televisions on the receiving end of TV signals."[22] Similarly, the wireless cable industry has been actively exploring opportunities for providing high speed Internet access and other two-way services.[23] The

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[19] *See Rulemaking to Amend Part 1 and Part 21 of the Commission's Rules to Redesignate the 27.5 - 29.5 GHz Frequency Band, to Reallocate the 29.5 -30.0 GHz Band, and to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services*, FCC 95-230, at ¶ 3 (rel. July 28, 1995)[hereinafter cited as "*LMDS Order*"].

[20] *See, e.g.*, Farhi, "Agreement Removes A Digital TV Obstacle," *Washington Post*, at D1 (Nov. 26, 1996); [cites to come from trade press on DTV standards compromise].

[21] "Technical Standards for Digital Television," *Public Notice*, FCC 96-465, MM Docket No. 87-268 (rel. Nov. 27, 1996).

[22] McConnell, "Way paved for PCTVs," *Broadcasting & Cable*, at 4 (Dec. 2, 1996).

[23] *See, e.g.* "CAI Wireless High-Speed Access News", *Wireless Cable Investor*, at 2 (Oct. 31, 1996)("CAI Wireless . . . announced FCC clearance to roll out its Internet and Intranet commercial services to up to 500 homes in Rochester, NY"); "Wireless Data Test," *Cable World*, at 53 (Oct. 28, 1996)("American Telecasting Inc. (ATI) and MCI Telecommunications Corp. will test high speed Internet access . . .."); Gibbons, "MMDS Ops Test High Speed Data," *Multichannel News*, at 14 (Sept. 14, 1996); "Modem alternatives emerge," *Broadcasting & Cable*, at 44 (May 27, 1996)("Although the cable industry is waiting for two-way, high-speed cable modems, National Digital Networks is looking to get into the market first by offering high-speed asymmetrical wireless cable modems."); Gibbons, "Wireless Execs Bullish on Data; Bash, Worry About Cable Ops," *Multichannel News*D, at 65 (July 15, 1996)("CAI and NDN detailed a Washington, D.C., project that uses Hybrid's gear to connect 15 schools and businesses to the

(continued...)

Commission has been highly supportive of those efforts. The *Declaratory Ruling and Order* adopted by the Commission last July in DA 95-1854 set the stage for expanded wireless cable service offerings by providing a vehicle for the introduction of the digital technologies that are at the heart of the contemplated two way services.[24/] Since then, the Mass Media Bureau has confirmed that, subject to compliance with the policies established in the *Declaratory Ruling and Order*, a wireless cable operator can utilize MDS and leased excess ITFS capacity for the provision of an asymmetrical Internet access service that employs a telephone return link from the subscriber's premises.[25/]

[23/] (...continued)
Internet at asymmetrical speeds of up to 10 megabits per second in the downstream direction."); Naik, "'Wireless Cable' Firm Plans to Boost Speed of Internet Access," *Wall St. J.*, at B16 (May 30, 1996); *Communications Daily*, at 10 (May 24, 1996)("Wireless cable operator CAI has begun testing technology to deliver high speed Internet access via wireless cable"); *CableFax* (April 1, 1996)("People's Choice said it would use its 28 wireless cable licenses won in the FCC's MDS auction to offer Internet access, data services, and fixed wireless local loop telephony in addition to video programming); Isenberg, "Fast Speeds, Phone Wires, No ISDN," *Digital Media*, at 25 (Feb. 6, 1996)("Certainly, most of today's Internet applications fit ADSL's capabilities perfectly. But here, three new technologies look like competition: cable modems, wireless cable and ISDN."); "Good News: Digital Audio-Visual Council To Publish Digital Specs By End Of Year," *Video Technology News* (Sept. 25, 1995)("DAVIC's plan for the coming year encompasses such areas as . . . data and Internet access services through cable systems and wireless cable.");

[24/] *See Request for Declaratory Ruling on the Use of Digital Modulation by Multipoint Distribution Service and Instructional Television Fixed Service Stations*, FCC 96-304 (rel. July 10, 1996).

[25/] *See Internet Public Notice*. Indeed, the use of MDS channels for non-video applications was anticipated by the 1974 *Report and Order* establishing the MDS. In describing the potential uses of MDS facilities, Commission stated that "[t]he intelligence which is transmitted . . . may consist of private television, *high speed computer data*, facsimile, control information, *or other communications capable of radio transmission.*" *Amendment of Parts 1,*
(continued...)

Telephone return links, however, may not prove competitive, for they do not afford consumers the single-source service that cable and LMDS will provide, they preclude the higher data rates possible utilizing wireless return paths, and they do not ease the burden on the public switched telephone network resulting from the significant differences between Internet usage and

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[25] (...continued)
communications capable of radio transmission." *Amendment of Parts 1, 2, 21, and 43 of the Commission's Rules and Regulations To Provide for Licensing and Regulation of Common Carrier Radio Stations in the Multipoint Distribution Service*, 45 F.C.C.2d 616, 617 (1974)(emphasis added). Since then, the Commission has consistently recognized that MDS licensees enjoy the flexibility to provide a variety of video and non-video services, subject only to compliance with, or the receipt of a waiver of, the Commission's technical rules. *See, e.g. Amendment of Parts 21 and 74 of the Commission's Rules With Regard To Filing Procedures In The Multipoint Distribution Service and In The Instructional Television Fixed Service*, 10 FCC Rcd 13821, 13825 (1995)("We will allow alternative uses other than wireless cable video transmission if the applicant can satisfy MDS technical rules or adequately support waivers of those rules."); *Amendment of Parts 21 and 74 of the Commission's Rules With Regard To Filing Procedures In The Multipoint Distribution Service and In The Instructional Television Fixed Service*, 10 FCC Rcd 9589, 9619 (1995)(recognizing that the Commission's Rules "permit use of MDS frequencies for other kinds of services [than wireless cable]" and "emphasiz[ing] that nothing in this *Report and Order* precludes either new licensees or incumbents from using MDS frequencies for other [non-video] kinds of services.") [hereinafter cited as *"MDS Auction Order"*]; *Revisions to Part 21 of the Commission's Rules*, 2 FCC Rcd 4251, 4255 (1987)("We believe a similar flexible approach is particularly appropriate to MDS . . . In the non-entertainment market, MDS may compete with short-haul microwave, coaxial cable, Digital Termination Systems, fiber optic cable and fixed satellites."). *Application for Transfer of Control; Arthur Lipper Corporation and Tymsshare Inc.*, 85 F.C.C. 2d 1023, 1040-41 (1980)(acquisition of largest MDS licensee by data communications carrier is approved by FCC on the ground that "the development of new, innovative types of service was the Commission's intention when it allocated spectrum for MDS [and] the proposal should provide the applicants and improved opportunity to explore a variety of alternative uses for MDS service."]. As a result, Section 21.903(b) of the Commission's Rules has always provided that an MDS station may be used for "any kind of communications service." Moreover, the Mass Media Bureau had previously ruled that ITFS licensees may employ their channels for full time Internet access, and had recognized that where such usage is in connection with courses offered for academic credit, it satisfies an ITFS licensees obligations under Sections 74.931 (a) and (e). *See* letter to George Washington University and Hybrid Network, Inc. from Barbara A. Kreisman, Chief, Video Services Division (dated Feb. 26, 1994).

voice usage. ADC believes that the 2305-2320 MHZ band provides broadcasters, wireless cable operators and others who are similarly situated a viable alternative to the telephone network for communications from subscribers.

Just recently Blair Levin, Chief of Staff to the Chairman, persuasively argued for "creating a glidepath towards PC and TV convergence, so that the TV of the future can be a hospitable, ***competitively neutral platform*** to the host of new services and new competition the television industry, and all participants in the communications revolution can bring."[26/] Only by assuring the broadcasters and wireless cable operators have the opportunity to provide the same two-way communications services as cable and LMDS can the Commission assure that the television monitor does serve as a competitively neutral platform.

C. The Flexible Service Rules Proposed For WCS May Foreclose Use Of The 2305-2320 MHZ Band As Envisioned By ADC.

The Commission has proposed in the *NPRM* to allow WCS licensees to provide an unprecedented array of services on the premise that "permitting this flexibility in service offerings for WCS will foster the provision and mix of services most desired by the public."[27/] Although ADC generally supports flexible spectrum use, unbridled flexibility will not always result in the most efficient or best use of spectrum. Indeed, in this case complete flexibility is likely to restrict competition, discourage innovation, and delay the provision of new services.

[26/] "DTV: Bridge To The Future Or Bridge Over The River Kwai?", speech of Blair Levin delivered to Citizens for a Sound Economy (Nov. 22, 1996) (emphasis added).

[27/] *NPRM* at ¶ 9.

As a leading manufacturer of wireless communications equipment, ADC appreciates that technological flexibility must be constrained by common standards in order to provide interference-free service to the public. Under the proposed regulatory scheme, licensees will not be able to develop efficient spectrum utilization plans because they will never be sure what types of services the adjacent licensee is providing. The inevitable lack of standardization and service parameters will make coordination between adjacent markets more costly and complex. It is at best unclear, for example, how the Commission would assure that a terrestrial mobile system can be operated in a market adjacent to a fixed terrestrial system. Where adjacent licensees operate conflicting services, the Commission inevitably will be called upon to determine (i) how interference issues will be resolved in such instances, and (ii) whether a licensee is entitled to a refund of its auction payments if the Commission subsequently determines that it cannot operate its proposed system because of adjacent operations.[28/]

Since bidders will be unable to know until after the conclusion of the auction what services will be deployed in adjacent markets or on adjacent channels, auction prices will be adversely impacted. For example, a broadcaster or wireless cable operator desiring to construct a fixed terrestrial system for return channel use will reduce its valuation of the spectrum because it is unclear how interference issues with possible adjacent mobile users will be resolved.

Unbridled flexibility will also slow the delivery of services to the public. If licensees can provide virtually any services over WCS spectrum, manufacturers will be reluctant to develop

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[28/] *See* Tara Susan Becht, "The General Wireless Communications Service: FCC Spectrum Traffic Cop or Broker?" 4 ComLaw Conspectus 95, 102-03 (1996).

products for use on these frequencies until licenses are awarded and a critical mass of licensees announce a common plan for use of the spectrum. Moreover, flexibility does not provide manufacturers with the certainty needed to develop technically compatible, economically viable new equipment and applications. At a minimum, the flexible regulatory scheme proposed for WCS will likely increase the cost of equipment, because equipment will have to be designed both not to interfere with the numerous other service offerings that could be provided over the same spectrum, and to reject interference from such other potential services. If, however, the Commission were to assign WCS spectrum for a limited number of flexible uses, compatible equipment could be designed and interference problems minimized. Thus, rules providing limited service flexibility would actually spur the development of new equipment and deployment of new services far better than the current proposal.

In ADC's view, the most appropriate balance between flexibility and certainty is for the Commission to limit the 2305-2320 MHz band to fixed terrestrial uses. Given the vast amount of spectrum already allocated to Commercial Mobile Radio Services ("CMRS"), the benefits of preventing potential interference from mobile use of the 2305-2320 MHz band far outweigh any detriment from precluding mobile use. More than 205 MHz of spectrum has already been allocated for the provision of CMRS[29] and the Commission has determined that "the recent allocation of 120 megahertz of spectrum at 2 GHz for general mobile services in the form of broadband PCS is sufficient to satisfy the needs of general mobile service providers in this

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[29] *See Implementation of Sections 3(n) and 332 of the Communications Act*, 9 FCC Rcd 7988, 8108 (1994). CMRS licenses range in size from 30 MHz Broadband PCS licenses to 1.55 MHz 220 MHz SMR licenses.

frequency range."[30/] Allocating an additional 30 MHZ of spectrum for potential CMRS use is inconsistent with this determination, would devalue the Personal Communications Service ("PCS") licenses already auctioned, and could jeopardize the ability of winning bidders to acquire the capital necessary to build-out their PCS systems successfully.

The Commission is well aware of the financial strain placed on small businesses by the cost of acquiring PCS licenses at auction. Many financial institutions question the prices paid to acquire these licenses and a number of small businesses have been unable to satisfy their payment obligations. If an additional 30 MHZ of spectrum is now made available for CMRS use, financial institutions would become more unwilling to extend their resources to small businesses that acquired licenses during the PCS auctions. Simply put, the more spectrum available for CMRS, the less any particular spectrum is worth.

Small businesses already face difficulty in obtaining financing[31/] and will see the limited available financing disappear if it is determined that they overpaid for their CMRS licenses. Although the PCS auctions ensured that licensees paid "market value" for their licenses at the time of auction, a subsequent allocation of an additional 30 MHZ for the provision of CMRS will reduce the market value of these PCS licenses. As a result if WCS spectrum can be used for CMRS, many licensees, including small businesses, will be seen to have overpaid for the spectrum and will be unable to obtain the financing necessary to develop competitive systems and satisfy build-out requirements.

[30/] *Allocation of Spectrum Below 5 GHz Transferred from Federal Government Use*, 10 FCC Rcd 4769, 4781 (1995).

[31/] *See Implementation of Section 309(j) of the Communications Act — Competitive Bidding*, 9 FCC Rcd 5532, 5572 (1994).

Congress mandated that the Commission ensure that small businesses be given the opportunity to participate in the provision of spectrum-based services.[32/] The Commission should be cognizant of the effect the current proposal will have on its previous efforts to encourage small business participation in the communications marketplace. It is one thing for the Commission to decide that it should not pick winners and losers in developing spectrum allocation policies. It is an entirely different matter, however, to change the ground rules on companies before they have a fair opportunity to implement their business plans.

D. The Commission Should Award 15 MHz Authorizations For the 2305-2320 MHz Band Based On BTAs.

Given the demands of the marketplace, the Commission should award 15 MHZ WCS licenses on the basis of BTAs.

It bears repeating that ADC is not asking the Commission to set aside any spectrum in the 2.3 GHz band for the exclusive use of broadcasters and wireless cable operators. Rather, ADC is merely asking the Commission to assure that those video providers have a fair opportunity to bid for and productively use some portion of that spectrum. As demonstrated above, these industries must have two-way capabilities in order to keep pace.[33/] By auctioning licenses for

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[32/] 47 U.S.C. § 309(j)(4)(D). *See Implementation of Section 309(j) of the Communications Act — Competitive Bidding*, 9 FCC Rcd 5532, 5572 (1994).

[33/] *See supra*, at 6-13. While the Commission has allocated a small quantity of spectrum at 2686-2690 MHz for use by wireless cable operators as return paths, it has proven technologically difficult to employ that spectrum because it is directly adjacent to a channel used for the transmission of programming to consumers. The Commission has already acknowledged the interest of wireless cable in securing additional spectrum for the provision of telephone service in competition with the local exchange carriers. *See LMDS Order*, at ¶ 107.

15 MHz for each BTA, the Commission can provide broadcasters and wireless cable system operators another mechanism for providing a competitive offering.

Licensing the entire 2305-2320 MHz band as a single authorization will provide sufficient spectrum for meeting the needs of the broadcast and wireless cable industries for return channel capabilities. ADC has been an active participant in trials involving the use of MDS and ITFS channels for high speed Internet data distribution. As a result of that experience, ADC has determined that the amount of spectrum required for upstream transmissions (*i.e.* those from the subscriber) relative to downstream (*i.e.* those to the subscriber) relates to the modulation efficiency employed, the asymmetry of data traffic, and other factors. ADC has recently commissioned the David Sarnoff Research Center to study these factors and recommend system parameters and architectures. Based on that work, ADC believes that at least 12 MHz of spectrum will be necessary for many wireless cable system operators to provide the level of interactivity the marketplace is likely to demand. Of course, those that do not require the entire 15 MHz should be able to disaggregate, as proposed in the *NPRM*.[34/]

While ADC appreciates the Commission's desire to minimize the number of licenses that will be awarded at auction in order to meet the deadlines established in the Appropriations Act,[35/] the Commission's apparent rejection of BTAs as the most appropriate service area will seriously prejudice those service providers (including wireless cable operators) that intend to utilize WCS in conjunction with other services that are licensed on the basis of BTAs.

[34/] *See NPRM*, at ¶ 27.

[35/] *See id*, at n. 27.

The benefits of permitting wireless cable operators to incorporate WCS into their service offerings clearly will be enhanced by establishing WCS service areas that are co-terminus with the service areas afforded MDS licensees. The Commission now awards MDS licenses based on BTAs.[36/] Use of any area other than BTAs for the licensing of WCS will force wireless cable operators to bid for WCS rights in areas where they cannot use WCS to provide services complementary to wireless cable. Wireless cable operators are not alone in this regard. Although broadcasters are not licensed on the basis of BTAs, BTAs certainly more closely fit broadcast service areas than the MTAs, regions or nationwide service areas proposed in the *NPRM*.

The Commission has already found that BTAs are representative of likely local communications markets.[37/] Because BTAs are smaller than the service areas proposed in the *NPRM*, use of BTAs would accomplish the Commission's objective of fairness to smaller entities.[38/] As the Commission has recognized, "by permitting broader participation, smaller service areas may produce a greater degree of technical and service innovation than would be

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[36/] *See MDS Auction Order*, 10 FCC Rcd at 9603-08.

[37/] *See Amendment of the Commission's Rules to Establish New Personal Communications Service*, 8 FCC Rcd 7700, 7733 (1993)[hereinafter cited as "*PCS Second Report and Order*"].

[38/] *See, e.g. Amendment of the Commission's Rules to Establish New Personal Communications Services*, 9 FCC Rcd 4957, 4988 (1994)[hereinafter cited as "*PCS Memorandum Opinion and Order*"]("[B]y licensing some blocks on a BTA basis, we comply with Congress' directive that we prescribe area designations that promote economic opportunity for a wide variety of applicants, including small businesses, rural telephone companies, and business owned by members of minority groups and women.).

expected from a few large firms."[39] Yet, adjacent BTAs could be combined by those service providers who demand a more regional scope.[40] This would yield efficient spectrum utilization. Local service providers could secure authorization for just a single BTA, while those service providers operating on a broader geographic scope could accumulate licenses for multiple BTAs.[41]

ADC recognizes that the Commission has indicated an aversion to licensing more than 306 WCS licenses at one due to concerns over its ability to complete the auction in time to satisfy Congress' mandate that the auction proceeds be received by the Treasury no later than September 30, 1997. ADC believes, however, that the Commission can employ ADC's proposed approach -- which results in the auctioning of 493 WCS BTA authorizations and 3 DARS licenses, within the necessary time frame by making some minor changes to its auction procedures.

It is well settled that the Commission may modify its bidding procedures on an auction-by-auction basis where necessary to encourage participation by serious bidders and simplify the bidding process.[42] Unlike prior auctions, in this case the Commission must accommodate a very tight auction deadline imposed by Congress -- a circumstance that certainly justifies a change in

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[39] *PCS Second Report and Order*, 8 FCC Rcd at 7733.

[40] *See PCS Second Report and Order*, 8 FCC Rcd at 7733.

[41] *See, e.g. PCS Memorandum Opinion and Order*, 9 FCC Rcd at 4988.

[42] *See, e.g., In the Matter of Implementation of Section 309(j) of the Communications Act - Competitive Bidding*, 9 FCC Rcd 2348, 2378-9 (1994) [discussing FCC discretion to modify up-front payment requirements]; *In the Matter of Revision of Rules and Policies for the Direct Broadcast Satellite Service*, 11 FCC Rcd 9712, 9789-92 (1995) [adopting modified procedural and payment requirements for DBS auctions].

auction rules. ADC thus submits that in order for the Commission to conduct and close a fair auction by September 30, 1997, the Commission should amend its auction procedures and up-front payment requirements in a manner which expedites the process.

At the outset, the Commission should adopt two rule revisions that will encourage bidders to bid early in the process *on the authorizations which they intend to acquire*. The Commission's prior simultaneous multiround auctions have dragged on longer than necessary because the Milgrom-Wilson activity rule provides bidders with an incentive during early rounds to bid on authorizations which they are not truly interested in acquiring. Whatever benefits games theorists might say are derived from this conduct, there can be no question that it extends the auction process. ADC believes that two modifications to the auction rules will force bidders to more quickly concentrate their efforts on authorizations which they truly desire.

First, the Commission should implement a non-simultaneous "stopping" rule under which the Commission will stop taking bids on a particular authorization if no bids have been submitted for that market after a specified number of round, say ten. This will shorten the auction by preventing the "hiding" or "parking" of eligibility early on in the process.

Second, the Commission should require bidders to submit market- and frequency-specific up-front payments rather than a blanket up-front payment that allows a bidder to remain eligible in each round for any combination of markets covered by the entire payment. In prior auctions, the Commission has allowed applicants to check the "All" box on FCC Form 175, which enabled an applicant to maintain bidding eligibility for all markets even if the applicant submitted an up-front payment that in fact only covered a small number of markets where the applicant actually

intended to provide service. This procedure has allowed a bidder to "hide" eligibility for multiple rounds by bidding on any number of markets in which it has no interest until it believes it is advantageous to finally submit a bid for its desired markets. By tying a bidder's up-front payment to the markets and frequencies on which the applicant truly wants to bid, the Commission will reduce this type of gamesmanship and encourage serious bidding much earlier in the auction process.

Finally, the Commission should consider increasing the number of bidding rounds per day. Many of the bidders who will participate in the Commission's 2.3 GHz auction will have already had experience with the Commission's auction process through the Commission's prior auctions. As a result, the "learning curve" for the 2.3 GHz auction should not be nearly as steep, thereby enabling the Commission to accelerate the pace of the auction without prejudicing serious bidders.